

light charcoal points in a galvanic battery, and the light of the sun.

Now, although we do not know by what property of the eye rays less refrangible than the extreme red become invisible, yet this will appear on inspection to be a wise arrangement of Providence.

For if the rays which emanate from bodies at ordinary temperatures were invisible they would overpower those exquisitely beautiful colours of nature which are produced by reflection of the solar light; besides which, there would be no such thing as darkness, even when the eye was closed, for light would still issue from the eyelids. And again, if rays did not become visible till at a much higher temperature than 600° , combustion would go on in darkness, and we should never be warned of the presence of fire.

Finally, if we suppose a number of bodies (for simplicity's sake spheres) to have been originally at the same temperature, it is clear, that since radiation will vary with the surface exposed, large spheres, the surface of which bears a less proportion to their solid contents than that of smaller ones, will cool more slowly than smaller ones; so that at any given time a large sphere would be at a much higher temperature than a small one, and would, consequently, emanate visible rays, while the rays of the other would be invisible.

Therefore, in a system of bodies, such as the solar system, the centre of attraction is also the centre of illumination which is a most wise and beneficial arrangement.

ART. XI.—*Descriptive Characters of New Alpine Plants, from Continental Australia. By DR. FERDINAND MUELLER.*

IN offering this small, yet perhaps not unwelcome contribution towards the botany of Australia, I wished to conclude the precursory diagnostic notes on our Alpine flora, of which some scattered fragments appeared in this journal, and in the papers of the Victorian Institute.*

* The plants there enumerated and described are the following:—*Eriostemon lancifolius*, *P. phyllicifolium*, *Phebalium ozothamnoides*, *Ph. podocarpoides*, *Crowea exalata*, *Scleranthus miaroides*, *Kunzea ericifolia*, *Burtona subalpina*, *Oxylobium alpestre*, *Bossiaea distichoclada*, *Eurybia megalophylla*, *Eurybia alpicolo*, *Brachycome multicaulis*, *Br. nivalis*, *Antennaria nubigena*, *Gnaphalium alpigenum*, *Agrostis nivalis*, *Agr. frigida*, *Agr. gelida*, *Danthonia robusta*, *Hierochloa submutica*, and *Astelia psychrocharis*. A few as doubtful remained yet uncharacterized.

For further details on the position which the plants from our snowy mountains occupy in phyto-geography, showing how far they are endemic, how far connecting those of distant countries, and how far identical with those of other parts of the globe, and for information on their uses and peculiarities, I beg to refer to my published official reports. It remains here only to acknowledge, that without the use of the admirable Flora Antarctica of Dr. Jos. Hooker, and the yet unfinished Flora of New Zealand, from the pen of the same celebrated author, I should have been unable to analyze these plants regarding their distinctive characters with that precision which was earnestly desired, but perhaps not attained.

RANUNCULACAE.

1. *Ranunculus anemoneus*.

(Sect. *Hecatonia*.)

Glabrous or hirsute; root fasciculate; stem thick, simple, erect, one-three flowered, below leafless, at the base vaginate; leaves veined, the radical ones on long and strong petioles, orbicular, to the base divided into three or five lobes; these deeply three or five-cleft, covering each other, their lobules variously cut, acute; bracteal-leaves large, cordate-orbicular, dissected, sessile, clasping; peduncle naked or with a smaller bracteolar-leaf; sepals five-seven, ovate, appressed, slightly villose; petals large, white, generally numerous, twice or three times as long as the calyx, narrow oblong-cuneate, entire; nectar-pit solitary, margined; carpels turgid, even, glabrous, margined; their style at the extremity hooked.

On springs at the summit of the Munyang Mountains.

This charming and interesting species forms, next *Grevillea Victoria*, the greatest ornament to the Snowy Mountains of Continental Australia. It differs from similar showy ones in New Zealand already, in its white petals, and approaches rather to the European alpine type of the genus represented by *R. aconitifolius*, *glacialis*, &c.

2. *Ranunculus Millani*.

(Sect. *Hecatonia*.)

Dwarf, stemless; root fasciculate-fibrous; scape simple, one-flowered, solitary, spreading-downy, of the length of or

shorter than the petioles; leaves pinnatisected, glabrous or together with the upper part of the petioles scantily downy; segments few, linear, undivided or bi-trisected, terminated by a gland; sepals appressed, glabrous, nearly ovate, with membranous margin; petals five-ten, white, obovate or oblong-cuneate, almost twice as long as the calyx; nectar-pit distant from the base, margined, covered by a hardy perceptible scale; carpels few, glabrous, broad-ovate, compressed, margined, smooth, with a hooked style.

In gravelly places on most of the summits of the Australian Alps, irrigated by the melting snow.

I should have referred this neat little plant to the Tasmanian *R. nanus*, were the discrepancy in the colour of the petals, a character of such validity in this genus, not too manifest; for whilst to that species bright yellow petals are attributed, I found them always white in this, and assuming only a slight yellow tinge when drying.

In selecting the specific name, I desired to pay a slight scientific tribute to the merits of A. M. Millan, Esq., who not only forced, with skill and enterprise his way first into Gipps' Land, opening one of the finest districts of whole Australia to civilisation, but who also named and first ascended Mount Wellington, where I became originally acquainted with this plant.

3. *Caltha introloba.*

(*Sect. Psychrophila.*)

Dwarf, leaves on long petioles, hastate-ovate, notched at the summit, perfectly entire, enlarged at the base by two long lobes; these bend inward, oblong-linear, below dilated; scape with one flower, very short; sepals white, five-eight, deciduous, lanceolate-linear, acuminate; carpels five-nine, with three seeds, and a long straight style, reflexed at the top.

On gravelly places in the Australian Alps, irrigated during the summer months by the melting snow. Mount Hotham, Mount Latrobe, and Munyang Mountains.

To be distinguished from *C. Novae Zeelandiæ* principally by its white flowers, and longer leaf-lobes. It is the only species known from New Holland.

DIOSMEAE.

4. *Phebalium ovatifolium*.

Leaves coriaceous, ovate, above smooth and shining, beneath lepidote, their margin recurved; peduncles axillary, solitary, with a single flower and three or four bracts, compressed, twice or three times shorter than the leaves; teeth of the calyx triangular-lanceolate, glabrous; petals lanceolate-ovate, whitish, little longer than the stamens; anthers affixed with their back; filaments glabrous; stigma capitellate, club-shaped; carpels apiculate.

In the rocky or scrubby parts of the Australian Alps, at the sources of the Murray and Snowy River.

That the genera *eriostemon* and *phebalium* are not strictly defined by clear and natural characters has been observed previously in other instances. This handsome species again may be referred to either of the two genera, which I would propose to unite.

5 *Eriostemon trachyphyllus*.

Tall, smooth, covered with glandular warts; leaves herbaceous, flat, entire, oblong-lanceolate, pointed, sessile, on both sides green, above shining; pedicels axillary, solitary, shorter than the leaves; segments of the calyx subdeltoid, glabrous; filaments fringed; style smooth; stigma five-cleft; carpels blunt; seeds shining, black, grey-variegate.

On the mountains at the Snowy River, near the Pinch Range, on rocks.

A fine plant, as well allied to *E. myoporoides* as to *E. intermedius*.

I beg to subjoin another rare plant of the order, although not alpine.

6. *Eriostemon microphyllus*.

Dwarf; branches asperous; branchlets thinly covered with starry downs; leaves coriaceous, crowded, much spreading, ovate- or cordate-orbicular, scabrous, with recurved apex, on short petioles; flowers several together terminal, glandulose; segments of the calyx triangular-ovate, nearly smooth; filaments as long as the corolla, glabrous, gradually tapering into the apex; appendage of the anthers exceedingly small; style glabrous.

On the low coast ranges of Spencer's and St. Vincent's Gulf, but only rare.

Of unquestionable alliance with *E. rotundifolius* (All. Cunn. in enum. pl. Hueg. p. 15.)

7. *Boronia algida*.

Fruticose, much branched; branchlets spreading or divaricate, velutinous, somewhat compressed; leaves on very short petioles, with two pairs of leaflets and a terminal one; these small, coriaceous, glabrous, obcordate or cuneate-ovate, with entire hardly recurved margins; flowers solitary twin or rarely several together without a common peduncle; pedicels on the base bracteolate, of nearly equal length with the ovate-lanceolate acuminate glabrous sepals; petals much longer than the glabrous filaments; style smooth, very short; stigma depressed-capitate.

On the highest stony declivities of our Alps; for instance on Mount Hotham, Mount La Trobe, and Mount Kosciusko.

A charming bush, allied to *B. rubiginosa*.

CRUCIFERÆ.

Blennodia. *R. Brown*.

(*Sect. Drabastrum*.)

Silique lanceolate, by its convex one-nerved valves almost tetragonal.

8. *Blennodia alpestris*.

Perennial, dwarf; stems erect, nearly naked, thinly pubescent, rarely branched; leaves lanceolate or ovate, toothed or nearly entire, gradually tapering into the petiole; flowers white, corymbose; style short; pedicels divaricate, of the length of the silique; valves distinctly one-nerved; seeds disposed in two rows, brown, minutely foveolate.

In subalpine grassy places on the sources of the Murray and Snowy River.

Erysimum brevipes, *curvipes* and *blennodes* (*B. lasiocarpa* msc.) are congeners of this plant, but as the cotyledons are at times slightly bent inward, I am uncertain whether the genus ought not to be united with *Diploptaxis* or *Moricandia*.

CARYOPHYLLEAE.

9. *Colobanthus pulvinatus*.

Perennial, glabrous; stems numerous, moss-like tufted; leaves densely crowded, rigid, squarrose, broad-subulate, channelled triquetrous, pungent, shining, with a slightly inflexed mucro; sheaths close; flowers terminal, solitary, on very short and thick peduncles, pentamerous; sepals from a broad base lanceolate-subulate, hardly longer than the egg-shaped capsule, and nearly twice as long as the stamens.

On the highest, barest, and gravelly tops of the Munyang Mountains. (6,000—6,500 feet.)

This forms a near approach to *C. Benthamianus*, a native of Cape Horn and the Falkland Islands, and not yet found similarly presented either in New Zealand or Tasmania, but is apparently identical with the pentamerous form of *C. Benthamianus* from Campbell's Island. Since also my plant invariably shows a quinery division of the flowers, I have separated it from the South American one, following Dr. Hooker's suggestions in the *Flor. Antarct.*, p. 247.

STACKHOUSEAE.

10. *Stackhousia pulvinaris*.

Depressed, with numerous intricate rooting branches, perfectly smooth; leaves somewhat fleshy, oblong or spatulate-linear, nearly blunt; flowers solitary on the summit of very short branchlets; bracteoles twin, as long or longer than the pedicel; flowers yellow; three of the stamens longer than the two others; anthers glabrous; style deeply bi- or trifold.

On the highest summits of the Australian Alps, where saturated with moisture, the widely expanded tufts decorated with fragrant starry flowers, form a beautiful carpet. (5—7,000 feet.)

As a species it connects the Tasmanian *S. flava* with *S. minima*, from New Zealand.

UMBELLIFERAE.

Dichopetalum.

A new genus of Hydrocotylæ. Flowers hermaphrodite, equal. Lobes of the calyx white, membranous, petaloid, of

the shape of the petals, and with these deciduous. Petals sessile, ovate-elliptical, with a blunt not inflexed apex. Stamens shorter than the petals. Styles divergent, subulate, arising from thick stylopodia. Fruit laterally compressed, nearly ovate, glabrous. Carpels with five ribs, destitute of vittæ. Carpophor undivided.

A genus well defined by the perfect and constant equality of calyx and corolla, which unite to form a decapetalous flower, a structure without parallel in the wide order to which this fine genus belongs.

The alliance, in other respects, to *Xanthosia* and *Oschatzia* is obvious.

11. *Dichopetalum ranunculaceum*.

Stemless, prostrate, hispid; root thick; leaves on long petioles, nearly round, three- to five-lobed; the lobes incisocrenate; scapes numerous; umbels few-flowered, simple or somewhat compound; involucre large, with two or three leaflets, which are often connate at the base.

On wet gravelly places chiefly around the springs in the Munyang Mountains. at an altitude from 5000 to 6000 feet.

Pozoa; *Lagasca*.

(*Sect. Schizeilema*, *J. Hooker*.)

12. *Pozoa fragosea*.

(*Fragosa hydrocotylea*, *Ferd. Mueller*, *Coll.*)

Glabrous; rhizome thick, creeping, with numerous long fibres; stems very short, prostrate; leaves herbaceous, long-petiolate, orbicular-reniform, net-veined, divided scarcely to the middle into five to nine crenulate lobes; stipules broad, membranous, torn; umbels sessile on the base of the petiole, or pedunculate, capitate, generally many-flowered; leaflets of the involucre five to eight, connate, lanceolate, with a few setaceous lobes; teeth of the calyx deltoid-ovate, somewhat acuminate, nearly acute; petals greenish; carpels ovate, compressed on the back, with five hardly prominent ribs, strongly contracted at the axis.

Under the shade of rocks on the highest tops of the Munyang Mountains, but of rare occurrence; 6000 feet.

I assigned to this plant a place in the genus *Pozoa*, on account of the great resemblance with *Pozoa reniformis*, P.

Ranunculus and *P. trifoliata*, but cannot surpress my opinion, that *Pozoa* and *Azorella*, rank only as groups of one large and polymorphous genus, namely *Fragosa*.

(*Sect. Sphagnosciadium.*)

Umbels few flowered, paniculate; leaflets of the involucre few or reduced to one; flowers hermaphrodite; teeth of the calyx deciduous.

13. *Pozoa cuneifolia*.

Sphagnosciadium cuneifolium, Ferd. Mueller coll.

Glabrous; rhizome, thick; stems erect; leaves all radical, cuneate, tapering into a long petiole, three-nine nerved, in front with three-nine acute teeth or laciniae; bracteoles lanceolate-subulate, entire; generally equal in number to the flowers of the umbels; flowers pedicellate, sometimes solitary; teeth of calyx small, nearly acute; petals white; fruit ovate, with a retuse base; carpels slightly compressed at the back, strongly five-ribbed.

At Mount Wellington, the Cobboras Mountains, and other localities of the Australian Alps, always in turf moss, (5,000 feet.)

It was not without hesitation that I referred this plant to *Pozoa*, differing from the rest so decidedly in its inflorescence, yet hardly in other respects.

Gingidium; *Forster*.

Anisotome; J. Hooker, not of Entomologists. *Calosciadium*, Endlicher.

14. *Gingidium glaciale*.

Dioecious; stem robust; leaves rigid, in outline almost ovate, bi- or tripinnated; segments hardly spreading, broad-linear, undivided, acute, mucronate, streaked, as well the rachis channelled and traversely articulated; umbels, many-rayed; carpels equal, semiterete.

In the higher regions of the Australian Alps, not rare, (5-7,000 feet).

The strange rigid foliage attracts the notice of all travellers which yet penetrated into this mountain.

15. *Gingidium simplicifolium*.

Diœceous; leaves rigid, undivided, elongate-linear, articulated, perfectly blunt, somewhat channelled; lower umbels, few-rayed, supported by an undivided large vaginated leaf.

In moist, grassy, subalpine meadows, from Mount Wellington to the Munyang Mountains.

It is certainly very singular that the species of anisotome or gingidium should be all endemic. Their striking feature is highly developed by gigantic species in Campbell's and Auckland's Islands, reappears by numerous distinct forms in New Zealand, but is wanting in Tasmania.

16. *Seseli Harveyanum*.

(*Sect. Euseseli.*)

Glabrous; stems several, erect, herbaceous, simple, from a perennial root; petioles of the stem with an ample vagina; radical leaves pinnatisected; upper segments lanceolate- or broad-linear, undivided, gradually pointed; the lower ones to the middle or nearly to the base two- or three-cleft or again pinnatisected; leaves of the stem simply pinnatisected or undivided; umbel with 4-8 unequal angulate glabrous rays and with a solitary or without a bract; bracteoles 1-3, linear-setaceous, unmarginated, sometimes wanting; fruit glabrous, oblong, somewhat compressed, with sharp prominent ribs and solitary vittae in the interstices.

In alpine and subalpine meadows from the Cobboras to the Munyang Mountains (4-5000').

Not dissimilar to *Seseli Pallasii* from Russia, offering with the following plant a new and unexpected connecting link between the Australian plants and those of northern countries since the genus was very scantily hitherto represented in the southern hemisphere, and quite unknown in Australia. The whole plant is of sweetish aromatic taste, reminding of Fennel and Garden Chervil, and might, I think, be cultivated to advantage.

17. *Seseli algens*.

(*Sect. Euseseli.*)

Glabrous, glaucous; stems several, generally decumbent, herbaceous, simple, from a perennial root; petioles with an ample vagina; radical leaves simply pinnatisected; segments

trapezoid, trifid, or the upper ones cuneate, all in front deeply and acutely toothed, often lacinated; leaves of the stem from one to three, pinnatisected; rays of the umbel 4-5, unequal, furrowed, glabrous; bracts 1-3, bracteoles several, both setaceous; fruit glabrous, truncate-ovate, with very prominent ribs.

On the gravelly borders of alpine rivulets and springs in the Munyang Mountains (5-6000').

The want of ripe fruit of this plant leaves some doubt about its true generic position. It is unquestionably allied to *Seseli Harveyanum*.

COMPOSITAE.

18. *Erigeron conyzoides*.

Perennial, smooth, somewhat glabrous; stem erect, herbaceous, leafy, below simple; lower leaves lanceolate, tri-nerved, tapering into a long petiole, remotely and sharply serrulate; upper ones broad-linear, acute, quite entire, sessile; flower-heads panicled, hemispherical or campanulate; scales of the involucre linear—subulate, somewhat scabrous on the back; female flowers extremely narrow, whitish, flat, little longer than the disk; achenes compressed, oblong, scantily hairy, hardly half as long as the pappus.

On the sources of the Murray and Snowy Rivers, (4000 to 5000 feet.)

19. *Trineuron nivigenum*.

Leaves linear, blunt, indistinctly three or five-nerved, on a clasping fimbriate petiole; heads many-flowered; scales of the involucre fourteen to sixteen, oblong, with three pellucid nerves; female flowers three-or four-toothed; their style very short bi-lobed; style of the sterile flowers undivided; achenes indistinctly tetragonous, oblong—cuneate, with but slightly thickened angles.

On grassy or gravelly places in the Munyang Mountains, irrigated by the melting glaciers, (5000 to 6000 feet.)

Intermediate between *T. spathulatum* from the Antarctic Islands, and *T. pusillum* from New Zealand.

20. *Antennaria uniceps*.

Depressed, rooting, densely foliate; leaves subcoriaceous,

somewhat rigid, channelled-linear, acute mucronulate, glabrous; petioles clasping, scarious, woolly fringed; flowerheads solitary, almost sessile; scales of the involucre glabrous, somewhat red, at the base green, the outer ones ovate, inner ones narrow-lanceolate, not radiating; pappus of the sterile flower-heads scabrous, very slightly thickened at the apex.

On gravelly places near springs, or such as are subject to inundations in the Munyang Mountains, (5000 to 6000 feet.)

A small tufted herb, somewhat resembling the *Raoulia tenuicaulis*. The fertile flowers are yet unknown.

EPACRIDEAE.

21. *Decaspora Clarkei*.

Stems short, diffused; branchlets slightly downy; leaves thinly coriaceous, flat, oblong-lanceolate, acutish, three or five-nerved, without a mucro, very much longer than the petiole, in front scabrous; spikes few-flowered, corymbose, as long as or longer than the leaves; faux of the large corolla bearded.

In shady ravines at Mount Wellington, half buried in decaying leaves; very rare.

This elegant little shrub bears the name of Capt. Andrew Clarke, the worthy President of the Philosophical Society, to whom the author is under many-fold great obligation, for promoting his researches.

The four other species, are endemic Tasmanian ones. The large bluish berries of this are eatable.

22. *Leucopogon Maccræi*.

(Sect. *Brachystachys*.)

Tall, much branched; branchlets very little spreading, firm, velvety; leaves spreading, ovate, or from a round base lanceolate, stalked, flat, not mucronate, glabrous, above shining in front ciliolate; spikes terminal or below the apex, few-flowered, soon erect; calyx and bracteoles blunt, ciliolated; tube of the corolla hardly longer than the calyx; anthers half exerted; style glabrous, enclosed; drupe globose, red, generally four-celled, nearly dry.

In vallies on the sources of the Mitta Mitta, near Mount Hotham and Mount La Trobe, as also along the torrents of the Cobboras Mountains. (5—6,000 feet.)

This fine species is dedicated to Andrew M'Crae, Esq., as an acknowledgment for much support received from him in my travels.

SCROPHULARINAE.

23. *Euphrasia alsa*.

Dwarf, annual; glandulously downy; leaves sessile, in outline ovate-cuneate, lacinate or pinnatifid; lobes of the leaves oblong or linear, blunt; spikes very short, few-flowered; calyx tubulose-campanulate, the lobes blunt, about as long as the tube; tube of the corolla hardly exerted, of equal length with the limb; the lobes of the lower lip emarginate, of the upper retuse; anthers scantily bearded, the cells of all short and equally spurred; capsule orbicular-ovate, in front densely ciliated, inclosed, much compressed, few-seeded.

Gregarious on the highest stoney summits of the Munyang Mountains—(6,000 feet).

It differs by its annual root from all other Australian and Tasmanian species, by almost equally spurred anthers from the European, by the bearded anthers from the South American, and respectively by the same characters from the New Zealandian species. *E. Antarctica* and *revoluta* are nearest to it related.

24. *Pæderota densifolia*.

Stems procumbent, cespitose; leaves thick, perfectly entire, cymbiform-ovate, ciliolate, sessile, densely imbricated in four rows; flowers bibracteate, axillary and terminal, solitary, sessile; corolla twice as long as the calyx, glabrous, pink, their tube inside unbearded; capsule obcordate; seeds oblique ovate, convex at the back.

On the highest rocky summits of the Munyang Mountains (6—6,500 feet).

A most remarkable herb, variable in the number of divisions of the corolla, and in their form.

Since it does not agree in habit with the European species, it may become the type of a new genus (*Cymbophyllum*).

PROTEACEAE.

25. *Grevillea Victoriæ*.

(*Sect. Calothyrsus*.)

Tall; leaves sub-coriaceous, undivided, long-lanceolate,

rarely ovate, acute, short-mucronate, gradually tapering into the petiole, penninerved, veined, with slightly recurved margin, above smooth, beneath with branchlets and rachis grey-silky; racemes pedunculate, axillary and terminal, elongate, sometimes divided, drooping, their development centripetal; calyces three times longer than the pedicel; outside rutilous, silky; inside, below the middle, white-bearded; style long-exserted, glabrous or scantily hairy at the extremity; germen-stalked, glabrous; stigma sublateral, ovate, slightly umbonate; follicle ellipsoidal, thinly ribbed, glabrous.

Along the waters of the Buffalo Range, on the summits of Mount Buller and Mount Tambo, on the sources of the Mitta Mitta, at Mount Hotham and Mount Latrobe.

A truly majestic plant, when, by descending into the vallies, it assumes a height of twelve feet and more. In higher altitudes it becomes a dwarfer bush, with shorter, almost ovate leaves.

26. *Orites lancifolia*.

(Sect. *Acroderris*.)

Leaves oblong-lanceolate, flat, glabrous, blunt, net-veined, perfectly entire; spikes axillary and terminal, sub-solitary; calyx smooth; germen silky-downy, follicle silky.

On the rocky summits of the the Australian Alps (5-6,000 feet high), for instance on Mount Wellington, Mount Hotham, Mount Latrobe, in the Munyang Mountains, in the upper valleys of the Mitta Mitta, &c.

This fine shrub is besides *Grevillea Victoria* the only real alpine species of this natural order indigenous to the Australian continent. But I am uncertain whether it may prove to be identical with *O. Milligani*, of which hitherto no description has been given.

CYPEROIDEAE.

27. *Scirpus polystachyus*.

Stems tall, trigonous, foliate, glabrous; leaves flat, on the keel and margins scabrous; cyme terminal, many times compound, little shorter than the three or five bracts of the involucre; spikelets ovate-oblong, partially solitary stalked, par-

tially glomerate; bracteoles somewhat keeled, lanceolate-ovate, awnless, naked on the margin, blackish-green and somewhat scabrous at the back; style trifid; caryopsis roundish-ovate, plano-convex, slightly angulate at the back, short-mucronate, pallid, even; hypogynous bristles at the top puberulous, variously curved, much longer than the fruit.

Along the rivulets and streams of the lower part of the Australian Alps; for instance, at Mount Linster, Omeo, and Gibbo Creek, Snowy River, &c.

Spikelets of the size of *Scirpus radicans*, between which species and *S. silvaticus* it seems intermediate.

I add here the only new species of *Scirpus*, with which I am acquainted, although not alpine.

28. *Scirpus leptocarpus*.

Dwarf, annual; root fibrous; stems numerous, slender angulate, streaked, one-leaved at the base; spikelets one-three, spuriously lateral, ovate, sessile, many-flowered; one bract of the involucre elongate, erect, at last horizontal; the other of the length of the spikelet; bracteoles oblong, acuminate, slightly recurved at the apex, straw-yellow, with brownish margin and green keel; style trifid; caryopsis trigono-cylindrical, fine dotted; hypogynous bristles white, slightly scabrous.

On moist or sometimes inundated localities on the Murray, Ovens, and King, Rivers.

29. *Oreobolus distichus*.

Leaves long, distichous, laxly imbricating, somewhat spreading, incurved, channelled, subulate, flat towards the summit, dilated and equitant at the base, serrulate-scabrous on the margin; peduncles angulate, furrowed, at last teretecompressed; bracteoles two or three, large, unequal; scales of the perigynium lanceolate, acuminate; caryopsis even, ovate, acuminate.

In peat-moss on the highest summits of the Australian Alps.

Allied to *Oreobolus pectinatus*.

The present species must be considered as an interesting addition to the genus. For a long time *Oreobolus Pumilio*, originally from Tasmania, now also observed in the Australian Alps, remained the only species. Gaudichaud added *Oreobolus obtusangulus* from the Hermite and Falkland Islands,

and J. Hooker *Oreobolus pectinatus* from Lord Auckland's Group, Campbell's Island and New Zealand. Thus, it appears, that all these islands possess only an isolated representant of the genus.

30. *Carex Polyantha.*

Tall; leaves broad-linear, nearly flat, keeled, with the erect triquetrous stem a little scabrous; male spikes 4—5, elongate-cylindrical, the lowest ramified by several short ones; female spikes 3—5, very long, cylindrical, the lowest long pedunculate with remote flowers at the base; lower bracts very long foliaceous, auriculate but not vaginate at the base; stigmas two; fruit brown, ovate, sessile, glabrous, dotted, on both sides convex and distinctly streaked, abruptly terminated into a very short bidentate beak, as long as the lanceolate-subulate black bracteoles; caryopsis compressed, round-ovate, straw-yellow, shining, even.

In the vallies of the Upper Mitta Mitta, near Mount Hotham.

More allied to *Carex acuta* and *paludosa*, than to any of the Australian, Antarctic and New Zealandian species.

31. *Carex cephatotes.*

(*Sect. Psyllophora.*)

Dwarf; root fibrous; leaves narrow-linear, channelled, scabrid, as long as the smooth thin triquetrous stem; spike terminal, solitary, androgynous, dense-flowered, roundish-ovate, generally bractless, with male flowers at the summit; stigmas two; fruit spreading, lanceolate-ovate, very short stalked, terminated by a short undivided beak, nerveless, even, green with black-brown tip, slightly convex at the back, longer than the brown ovate acute persistent one-nerved bracteoles; basal arista wanting; caryopsis round-ovate, tapering into the base, brownish-yellow, even, shining.

On the grassy summits of the Munyang Mountains, moistened by the perpetual glaciers, or on the most elevated springs.

One of the handsomest species of a large cosmopolitan genus, allied to *Carex capitata*, from European and Asiatic Alps.

32. *Carpha nivicola*.

Rhizome creeping; stem very short, smooth; leaves and lower bracts broad-linear, blunt, with scabrous margin, flat towards the summit; spikelets one-flowered, fasciculate, greatly surpassed in length by the leaves; scales of the spikelets generally five, unequal, the outer ones twice or three times shorter than the rest; the innermost solitary, linear-setaceous, toothless, or wanting; bristles of the perigynium six, nearly to the top plumose, three times longer than the caryopsis; stamens three; style filiform, puberulous; stigmas three, capillary; caryopsis oblong-triangular.

On the highest summits of the Australian Alps, near swamps.

Closely allied to *C. alpina*. As a genus, I consider *carpha* as near allied to *oreobolus* as to *cyathochate*, *rhynchospora* or *chaetospora*.

GRAMINEAE.

Most of our new Alpine grasses are already published, but I avail myself of this opportunity to bring a kind of *Ehrharta* under notice, singular for its incomplete flowers.

33. *Ehrharta uniglumis*.

(Sect. *Tetrarrhena*.)

Stems branched, with the vaginæ and leaves scabrous, otherwise smooth; spikelets glabrous, distinct, perinath nerved, blunt; gimmella of the lower sterile flower a little longer than the solitary gluma, and as long as the hermaphrodite flower.

In humid valleys on the Brodribb River.

It bears the greatest resemblance to *Ehrharta* (*Tetrarrhena*) *contexta*, but differs from this in the equal length of the sterile flowers, and like from all others in the want of the outer glume.

ART. XII.—*On the Failure of the Yan Yean Reservoir. Embracing an Examination of the Report of the Committee on the Yan Yean Scheme.* By DAVID E. WILKIE, ESQ., M.D.

WHETHER we regard the magnitude of the works now in progress at Yan Yean, for the supply of the City of Mel-